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SUPPORTING DOCUMENT

Title	Number	Rev. No.	Page
241-TY TANK FARM EFFLUENT MONITORING PLAN	SD- WM-EMP-012	0	A

Key Words

Effluent, Monitoring

Author

A.T. Alstad — Signature

13331 — Organization Code

Abstract

The 241-TY Tank Farm Effluent Monitoring Plan was prepared to identify gas, liquid, and/or solid effluent streams for which monitoring is required. The information presented in this effluent monitoring plan is based upon available data in reports, procedures, etc., which pertain to the six single-shell tanks in TY Tank Farm. The analytical results of vapor space samples previously taken from three tanks in 241-TY Tank Farm were used to predict radionuclide levels in the gaseous effluent streams from the tanks. These levels were found to be less than the levels listed in RHO-MA-139, Environmental Protection Manual, which require monitoring and sampling; therefore, an Effluent Monitoring Plan for 241-TY Tank Farm is not a regulatory requirement at this time.

(Place an "X" in the box that applies)

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The 241-TY Tank Farm Effluent Monitoring Plan was prepared to identify gas, liquid, and/or solid effluent streams for which monitoring is required. The information presented in this effluent monitoring plan is based upon available data in reports, procedures, etc., which pertain to the six single-shell tanks in TY Tank Farm. The analytical results of vapor space samples previously taken from three tanks in 241-TY Tank Farm were used to predict radionuclide levels in the gaseous effluent streams from the tanks. These levels were found to be less than the levels listed in RHO-MA-139, Environmental Protection Manual, which require monitoring and sampling; therefore, an Effluent Monitoring Plan for 241-TY Tank Farm is not a regulatory requirement at this time.

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A-6400-073 (03/88)

	INITIAL RELEASE AND CHANGE CONTROL RECORD	(2) Document Number SD-WM-EMP-012	Page B
		INITIAL RELEASE	
(1) Title 241-TY TANK FARM EFFLUENT MONITORING PLAN		(3) Cognizant/Project Engineer A.T. Alstad — Date 9/9/92	
		(4) Cognizant/Project Manager G.L. Dunford — Date 9/9/92	
		(5) EDT Number 100616	Revision 0

CHANGE CONTROL RECORD

(6) Revision	(7) Description of Change – Replace, Add, and Delete Pages	Authorized for Release	
		(8) Cog./Proj. Engr	(9) Cog./Proj. Mgr Date

241-TY TANK FARM

EFFLUENT MONITORING PLAN

GASEOUS WASTE EFFLUENT SECTION

241-TY TANK FARM EFFLUENT MONITORING PLAN

INTRODUCTION

The 241-TY Tank Farm Effluent Monitoring Plan was prepared in response to Draft DOE Order 5400.1 (reference 13) (initially identified as DOE Order 5480.12), General Environmental Protection Program Requirements. The purpose of this plan is to evaluate all gaseous, liquid and solid effluent streams specific to the 241-TY Tank Farm and assess their potential for release of radioactive and nonradioactive pollutants. Effluent streams and their sources; stream characteristics and constituents; regulatory requirements; and monitoring, sampling, and analytical strategies are presented in this effluent monitoring plan. The information herein is based upon available data in reports, procedures, etc., which pertain to the six single-shell tanks in the tank farm.

SUMMARY

Only two types of waste effluents are generated from the inactive TY Tank Farm. These are gaseous and solid waste. There are no liquid waste effluent streams discharged from the facility into the environment. Solid waste is generated through normal tank farm activities (i.e. routine maintenance and occasional operation) and consists of such items as trash, broken tools, plastic sheets, torn and nonrepairable protective clothing, etc. The nature of the waste is normally one of low-level radioactive contamination, and following proper packaging and radiological survey practices, is disposedof in designated burial grounds. The vapor spaces of the underground storage tanks are passively ventilated to the atmosphere via vents equipped with high efficiency particulate air (HEPA) filters, also known as breather filter vents. These vents allow air to move either into or out of the tanks depending upon the relation of tank vapor space pressure to atmospheric pressure.

The breather filter vents are not currently monitored or sampled on a routine basis. Vapor space air sampling activities were conducted in the past in an attempt to identify the radionuclide concentrations in the effluent streams of inactive single-shell tanks. The sampling performed in the 241-TY Tank Farm, however, was not all inclusive in that only three of the six tanks air spaces were actually sampled. This approach was based on the assumption that the radionuclide concentrations of the vapor spaces in the remaining tanks could be predicted from the analytical results of the collected samples. These results are also the basis for determining the need for monitoring and sampling of the effluent streams addressed in this plan. The resulting radionuclide concentrations were found to be less than the levels listed in RHO-MA-139, Environmental Protection Manual, for which gaseous effluent monitoring and sampling are required.

Although routine monitoring and sampling are not required at this time, there does appear to be a need for a more complete and confident radionuclide characterization of the storage tank vapor space.

I. GENERAL INFORMATION

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-101 THROUGH TY-106 BREATHER VENTS (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

Type of Release: N/A

GENERAL DESCRIPTION: Tanks 241-TY-101 through TY-106 are single-shell storage tanks containing mixed waste to which no new additions are made. Airborne radionuclides are filtered from the tank atmosphere by the high efficiency particulate air (HEPA) filter in response to changes in atmospheric conditions.

DISCHARGE INFORMATION: Annual Volume Not measured Normal Flow Not measured

Discharged to Atmosphere Official Site ID None assigned

Discharge Site Location 200 West Area

Discharge Site Coordinates (reference 1) N42500 (North) W75902 (West)

MONITOR: Radiation None Nonradiation None

SAMPLER: Type None Constituents N/A

EMERGENCY ACTION: HEPA breather filters are replaced when they fail. During the time required to change the failed filter element, the manual tank isolation valve is closed.

Description: Each HEPA breather filter is given the dioctylpthalate (DOP) test on a scheduled basis by Ventilation Air Balance Unit personnel (reference 3). If any filter fails the DOP test, it is replaced according to procedure (reference 4).

HISTORICAL COMPARISON DATA: Although a specific air sampling program of the vapor space within all of the tanks has never been performed, contamination levels within the effluent streams passing through the HEPA filters were judged to be within the DCG guidelines stated in RHO-MA-139, based upon studies of single-shell tank farms (reference 2).

II. EFFLUENT STREAM OPERATING PARAMETERS

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

NORMAL OPERATING PARAMETERS FOR STREAM:

UNDER NORMAL CONDITIONS, SMALL AMOUNTS OF GAS ENTER AND LEAVE THE TANKS DUE TO CHANGES IN ATMOSPHERIC PRESSURE. THESE GASES FLOW THROUGH A HEPA BREATHER FILTER. THE GASES DISCHARGED THROUGH THE FILTER ARE NOT MONITORED ON A REGULAR BASIS.

Parameter	Unit of Measure	Parameter Range Low	Parameter Range High	Monitor ID	Ref. No.

NOTE: THERE ARE NO PROVISIONS ON THE HEPA BREATHER FILTERS ON EACH OF THE TANKS TO ALLOW MEASUREMENT OF THE EFFLUENT STREAM PARAMETERS. HOWEVER, THE NORMAL AIR FLOW RATE THROUGH EACH HEPA FILTER IS ESTIMATED TO BE 0.1 CFM (reference 5, pp. 9-12).

III. SPECIFIC CONTRIBUTORS

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid)

POTENTIAL CONTRIBUTOR RELEASE TO STREAM:

Contributor Tank Vapor Space

Specific ID N/A

Location _____ (Room) _____ (Building) 200W (Area)

NORMAL OPERATING PARAMETERS FOR CONTRIBUTOR:

Parameter	Unit of Measure	Parameter Range Low	Parameter Range High	Monitor ID	Ref. No.
Tank Pressure	in.WG	-9.0	+60.0	None	6, p. 11
Temperature (Dome)	^{o}F	---	250	None	6, p. 10

IV. CONSTITUENTS OF CONTRIBUTOR

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANKS 241-TY-101, -103, AND -106 BREATHER VENTS
(Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

Contributor: Tank Vapor Space

Specific I.D.: N/A

Location: ____ _____ 200W

Constituent	Concentration Value	Units	Available Quantity	Units	Ref. No.

SEE "HISTORICAL COMPARISON DATA", FORM I.

IV. Constituents of Contributor (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-102 BREATHER VENT (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

Contributor: Tank Vapor Space

Specific I.D.: N/A

Location: ____ _____ 200W

Constituent	Concentration Value	Units	Available Quantity*	Units	Ref. No.
Total Alpha	6.2E-14	uCi/ml	4.82E-5	uCi	10,11
Total Beta	1.3E-11	uCi/ml	1.01E-2	uCi	10,11

*Quantity estimated from information contained in references 10 and 11.

IV. Constituents of Contributor (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-104 BREATHER VENT (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

Contributor: Tank Vapor Space

Specific I.D.: N/A

Location: ____ _____ 200W

Constituent	Concentration Value	Units	Available Quantity*	Units	Ref. No.
Total Alpha	1.8E-11	uCi/ml	1.44E-2	uCi	10,11
Total Beta	2.3E-10	uCi/ml	6.0E-2	uCi	10,11
Strontium-90	1.9E-11	uCi/ml	1.52E-2	uCi	10,11
Plutonium-239	2.1E-14	uCi/ml	1.68E-5	uCi	10,11

*Quantity estimated from information contained in references 10 and 11.

IV. Constituents of Contributor (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-105 BREATHER VENT (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

Contributor: Tank Vapor Space

Specific I.D.: N/A

Location: 200W

Constituent	Concentration Value	Units	Available Quantity*	Units	Ref. No.
Total Beta	2.1E-8	uCi/ml	2.6	uCi	10,11
Strontium-90	2.0E-9	uCi/ml	2.35E-1	uCi	10,11
Cesium-137	1.1E-10	uCi/ml	1.3E-2	uCi	10,11

*Quantity estimated from information contained in references 10 and 11.

V. REACTION PRODUCTS

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code: None (EP Designation)

Type of Waste: Gas (Gas, Liquid, Solid)

PROCESS CONSTITUENTS AND PRODUCTS:
Feedstock, chemicals, reaction, and degradation products of the process.

Constituent	State*	Concentration	Units	Available Quantity	Units	Ref. No.

NO REACTION PRODUCT VAPORS OR REACTIVE VAPORS HAVE BEEN IDENTIFIED BECAUSE NO SAMPLING HAS EVER BEEN DONE FOR THIS SPECIFIC PURPOSE. REACTIVE PRODUCTS FROM THE EXISTING TANK CONTENTS ARE NOT EXPECTED.

POTENTIAL UPSET CONSTITUENTS AND PRODUCTS:

Constituent	State*	Concentration	Units	Available Quantity	Units	Ref. No.

BECAUSE NO SAMPLING HAS BEEN DONE TO IDENTIFY REACTIVE VAPORS, POTENTIAL UPSET CONSTITUENTS AND PRODUCTS CANNOT BE PREDICTED. HOWEVER, THEY ARE NOT EXPECTED TO EXIST BECAUSE THE TANKS ARE INACTIVE WASTE STORAGE TANKS TO WHICH NO NEW ADDITIONS ARE MADE.

*Designate whether substance is liquid, gas or solid.

VI. REGULATORY REQUIREMENTS

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANKS 241-TY-101, -103 AND -106 BREATHER VENTS (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

REGULATORY REQUIREMENTS: THIS SECTION DOES NOT APPLY BECAUSE THERE ARE NO KNOWN REACTIVE VAPORS OR PRODUCTS.

Constituent	State	Toxic Category	Concentration and Unit	Reg. Limit	Time Period	Ref. No.	Qty./ Unit	Reg. Qty.	Time Period	Ref. No.	Monitor Required	Sampling/ Analysis

REGULATORY REPORTS: THIS SECTION DOES NOT APPLY BECAUSE THERE ARE NO KNOWN REACTIVE VAPORS OR PRODUCTS.

Report	Subject	To	Date Due	Ref. No.

VI. Regulatory Requirements (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-102 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

REGULATORY REQUIREMENTS:

Constituent	State	Toxic Category	Concentration and Unit	Reg. Limit	Time Period	Ref. No.	Qty./ Unit	Reg. Qty.	Time Period	Ref. No.	Monitor Required	Sampling/ Analysis
Total Alpha	Gas	---	6.2E-14 uCi/ml	1xE-10	Inst.	9,10	--	--	---	10,11	None	---
Total Beta	Gas	---	1.3E-11 uCi/ml	4.5E-8	Inst.	9,10	--	--	---	10,11	None	---

REGULATORY REPORTS: THIS SECTION DOES NOT APPLY BECAUSE THERE ARE NO KNOWN REACTIVE VAPORS OR PRODUCTS.

Report	Subject	To	Date Due	Ref. No.

VI. Regulatory Requirements (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-104 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

REGULATORY REQUIREMENTS:

Constituent	State	Toxic Category	Concentration and Unit	Reg. Limit	Time Period	Ref. No.	Qty./ Unit	Reg. Qty.	Time Period	Ref. No.	Monitor Required	Sampling/ Analysis
Total Alpha	Gas	---	1.8E-11 uCi/ml	1E-10	Inst.	9,10	--	--	---	10,11	None	---
Total Beta	Gas	---	2.3E-10 uCi/ml	4.5E-8	Inst.	9,10	--	--	---	10,11	None	---
Sr-90	Gas	---	1.9E-11 uCi/ml	4.5E-8	Inst.	9.10	--	--	---	10,11	None	---
Pu-239	Gas	---	2.1E-14 uCi/ml	1E-10	Inst.	9,10	--	--	---	10,11	None	---

REGULATORY REPORTS: THIS SECTION DOES NOT APPLY BECAUSE THERE ARE NO KNOWN REACTIVE VAPORS OR PRODUCTS.

Report	Subject	To	Date Due	Ref. No.

VI. Regulatory Requirements (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-105 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

REGULATORY REQUIREMENTS:

Constituent	State	Toxic Category	Concentration and Unit	Reg. Limit	Time Period	Ref. No.	Qty./ Unit	Reg. Qty.	Time Period	Ref. No.	Monitor Required	Sampling/ Analysis
Total Beta	Gas	---	2.1E-8 uCi/ml	4.5E-8	Inst.	9,10	--	--	---	10,11	None	---
Cs-137	Gas	---	2.0E-9 uCi/ml	2.0E-6	Inst.	9.10	--	--	---	10,11	None	---
Sr-90	Gas	---	1.1E-10 uCi/ml	4.5E-8	Inst.	9.10	--	--	---	10,11	None	---

REGULATORY REPORTS: THIS SECTION DOES NOT APPLY BECAUSE THERE ARE NO KNOWN REACTIVE VAPORS OR PRODUCTS.

Report	Subject	To	Date Due	Ref. No.

VIIa. CONTRIBUTOR RISK ANALYSIS

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid, Solid)

Contributor Tank Vapor Space

Specific I.D. None

POTENTIAL FOR RELEASE:

Continuous Release Stream Design permits direct discharge to effluent stream	Relative Release Factor 10/design, 7/lock out 1/isolated *reference 5, page B-5	18*
Contributor monitored prior to discharge to effluent stream Automatic/manual-shutdown/recycle/diversion	1/auto, 3/manual, 10/none	10
	RELEASE FACTOR	28

UPSET SCENARIO:

NO CREDIBLE INCIDENT HAS BEEN IDENTIFIED WHICH WOULD UPSET THE INDIVIDUAL TANK VAPOR SPACES AND CAUSE RELEASES. THE UPSET SCENARIOS WHICH PERTAIN TO THESE TANKS ARE (1) BREACH OF THE HEPA FILTERS, AND (2) LOSS OF FLUID IN THE OIL SEAL LOOPS. REFERENCE 5, PAGES 9-6 THROUGH 9-12, PROVIDES A DISCUSSION OF EACH OF THESE POTENTIAL UPSETS.

RISK FACTOR FOR CONTRIBUTOR:

THIS SECTION CANNOT BE COMPLETED FOR THESE TANKS BECAUSE SAMPLE RESULTS DATA REQUIRED ON FORM I AND FORM III DO NOT EXIST.

VIIb. EFFLUENT STREAM RISK ANALYSIS

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

EFFLUENT STREAM RISK ANALYSIS:

Constituent	Contributor	Effluent % Concentration Limit	Contributor Flow to Exceed Limit (gpm)	Comments	Ref. No.

OF THE TWO EVENTS DISCUSSED IN "UPSET SCENARIO", FORM VIIa, LOSS OF THE OIL SEAL LOOP FLUID WAS CONSIDERED TO BE THE WORST PROBABLE OCCURRENCE WITH AN ANTICIPATED FREQUENCY OF ONE EVENT PER YEAR. THE RISK WAS JUDGED TO BE ACCEPTABLE (REFERENCE 5, pp 9-12). RELEASES FOLLOWING LOSS OF THE OIL SEAL LOOP FLUID WERE CALCULATED FOR TY-102, -104 AND -105, AND THIS INFORMATION IS PRESENTED ON FORM VI FOR EACH OF THESE TANKS.

VIII. MONITORING STRATEGY

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

241-TY-101, -103, AND -106 BREATHER VENTS (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

MONITOR REQUIRED: REGULATORY REQUIREMENTS (FORM VI) HAVE NOT BEEN DETERMINED BECAUSE OF INSUFFICIENT DATA AS TO SPECIFIC CONSTITUENTS. VAPOR SPACE SAMPLING IN EACH OF THE TANKS WILL BE REQUIRED PRIOR TO THE MONITOR DETERMINATION.

Constituent	Contributor (% Concentration Limit) Highest Risk		Lowest Risk	
	/LR*	/LR	/LR	/LR

*Leak Rate

MONITORING CAPABILITY: THIS SECTION IS NOT APPLICABLE. REGULATORY REQUIREMENTS HAVE NOT BEEN DETERMINED BECAUSE OF INSUFFICIENT DATA AS TO SPECIFIC CONSTITUENTS. VAPOR SPACE SAMPLING IN EACH OF THE TANKS WILL BE REQUIRED PRIOR TO MONITORING CAPABILITY DETERMINATION.

Monitorable Constituent	Contribution	Concentration and Unit	Required Detection Limits	Monitor Range Low / High	Contributor Leak Rate Detection Limits	Ref. No.

MONITORING STRATEGY: THIS SECTION IS NOT APPLICABLE BECAUSE NO MEANS OF MONITORING THE TANKS HAVE BEEN PROVIDED.

Monitored Parameter	Determine Contributor Source	Equivalent Sum (% of limit	Alarm Setpoint Ref. No.	Consensus Standard Ref. No.	WHC Ref. No.

VIII. Monitoring Strategy (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-102 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

MONITOR REQUIRED:

Constituent	Contributor (% Concentration Limit) Highest Risk /LR	/LR	Lowest Risk /LR	/LR
Total Alpha	0.0155%	--	--	0.039%
Total Beta	0.0073%	--	--	0.018%

MONITORING CAPABILITY: ALTHOUGH A SPECIFIC MONITORING CAPABILITY FOR THIS TANK DOES NOT EXIST, MONITORING IS NOT REQUIRED.

Monitorable Constituent	Contribution	Concentration and Unit	Required Detection Limits	Monitor Range Low / High	Contributor Leak Rate Detection Limits	Ref. No.

MONITORING STRATEGY: SINCE THIS TANK DOES NOT MEET MONITORING REQUIREMENTS, NO STRATEGY IS NEEDED.

Monitored Parameter	Determine Contributor Source	Equivalent Sum (% of limit	Alarm Setpoint Ref. No.	Consensus Standard Ref. No.	WHC Ref. No.

VIII. Monitoring Strategy (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-104 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

MONITOR REQUIRED:

Constituent	Contributor (% Concentration Limit) Highest Risk /LR	/LR	Lowest Risk /LR	/LR
Total Alpha	4.5%	--	--	11.0%
Total Beta	0.13%	--	--	0.32%
Sr-90	0.011%	--	--	0.027%
Pu-239	0.0053%	--	--	0.0133%

MONITORING CAPABILITY: ALTHOUGH A SPECIFIC MONITORING CAPABILITY FOR THIS TANK DOES NOT EXIST, MONITORING IS NOT REQUIRED.

Monitorable Constituent	Contribution	Concentration and Unit	Required Detection Limits	Monitor Range Low / High	Contributor Leak Rate Detection Limits	Ref. No.

MONITORING STRATEGY: SINCE THIS TANK DOES NOT MEET MONITORING REQUIREMENTS, NO STRATEGY IS NEEDED.

Monitored Parameter	Determine Contributor Source	Equivalent Sum (% of limit	Alarm Setpoint Ref. No.	Consensus Standard Ref. No.	WHC Ref. No.

VIII. Monitoring Strategy (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

TANK 241-TY-105 BREATHER VENT (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

MONITOR REQUIRED:

Constituent	Contributor (% Concentration Limit) Highest Risk /LR	/LR	Lowest Risk /LR	/LR
Total Beta	2.4%	--	--	0.61%
Cs-137	0.0003%	--	--	0.0007%
Sr-90	0.22%	--	--	0.56%

MONITORING CAPABILITY: ALTHOUGH A SPECIFIC MONITORING CAPABILITY FOR THIS TANK DOES NOT EXIST, MONITORING IS NOT REQUIRED.

Monitorable Constituent	Contribution	Concentration and Unit	Required Detection Limits	Monitor Range Low / High	Contributor Leak Rate Detection Limits	Ref. No.

MONITORING STRATEGY: SINCE THIS TANK DOES NOT MEET MONITORING REQUIREMENTS, NO STRATEGY IS NEEDED.

Monitored Parameter	Determine Contributor Source	Equivalent Sum (% of limit	Alarm Setpoint Ref. No.	Consensus Standard Ref. No.	WHC Ref. No.

IX. SAMPLING STRATEGY

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANKS 241-TY-101, -103, AND -106 BREATHER VENTS (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

SAMPLING REQUIRED: THIS SECTION IS NOT APPLICABLE FOR THESE TANKS. VAPOR SPACE SAMPLING IN EACH OF THE TANKS WILL BE REQUIRED BEFORE THE NEED FOR ADDITIONAL SAMPLING AT THE TANK BREATHER VENTS IS ESTABLISHED.

Constituent	Required Detection Limits	Contributor			
		Highest Risk		Lowest Risk	
		/ LR*	/ LR	/ LR	/ LR

*Leak Rate.

SAMPLING NEEDS: THIS SECTION IS NOT APPLICABLE FOR THESE TANKS BECAUSE THE INFORMATION NECESSARY TO DETERMINE SAMPLING NEEDS DOES NOT EXIST.

Constituent	Contributor Source	Type Sampler	Minimum Sampled Spill	Reg. Ref. No.	Concensus Standard Ref. No.	WHC Ref. No.	Strategy Ref. No.

IX. Sampling Strategy (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-102 BREATHER VENT (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

SAMPLING REQUIRED: BASED UPON FORM VI, NO SAMPLING IS REQUIRED FOR THIS TANK.

Constituent	Required Detection Limits	Contributor			
		Highest Risk		Lowest Risk	
		/ LR*	/ LR	/ LR	/ LR
Total Alpha	---	0.0155%	--	--	0.039%
Total Beta	---	0.0073%	--	--	0.018%

*Leak Rate.

SAMPLING NEEDS: SAMPLING THE EFFLUENT STREAM ON THIS TANK DOES NOT APPEAR NECESSARY.

Constituent	Contributor Source	Type Sampler	Minimum Sampled Spill	Reg. Ref. No.	Concensus Standard Ref. No.	WHC Ref. No.	Strategy Ref. No.

IX. Sampling Strategy (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-104 BREATHER VENT (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

SAMPLING REQUIRED: BASED UPON FORM VI, NO SAMPLING IS REQUIRED FOR THIS TANK.

Constituent	Required Detection Limits	Contributor			
		Highest Risk		Lowest Risk	
		/ LR*	/ LR	/ LR	/ LR
Total Alpha	---	4.5%	--	--	11.0%
Total Beta	---	0.13%	--	--	0.32%
Sr-90	---	0.011%	--	--	0.027%
Pu-239	---	0.0053%	--	--	0.0133%

*Leak Rate.

SAMPLING NEEDS: SAMPLING THE EFFLUENT STREAM ON THIS TANK DOES NOT APPEAR NECESSARY.

Constituent	Contributor Source	Type Sampler	Minimum Sampled Spill	Reg. Ref. No.	Concensus Standard Ref. No.	WHC Ref. No.	Strategy Ref. No.

IX. Sampling Strategy (continued)

241-TY TANK FARM/200 WEST AREA (Facility/Location)

TANK 241-TY-105 BREATHER VENT (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

SAMPLING REQUIRED: BASED UPON FORM VI, NO SAMPLING IS REQUIRED FOR THIS TANK.

Constituent	Required Detection Limits	Contributor			
		Highest Risk		Lowest Risk	
		/ LR*	/ LR	/ LR	/ LR
Total Beta	---	2.4%	--	--	0.61%
Cs-137	---	0.0003%	--	--	0.0007%
Sr-90	---	0.22%	--	--	0.50%

*Leak Rate.

SAMPLING NEEDS: SAMPLING THE EFFLUENT STREAM ON THIS TANK DOES NOT APPEAR NECESSARY.

Constituent	Contributor Source	Type Sampler	Minimum Sampled Spill	Reg. Ref. No.	Concensus Standard Ref. No.	WHC Ref. No.	Strategy Ref. No.

X. ANALYSIS STRATEGY

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

Tank 241-TY-102, -104, and -105 BREATHER VENTS (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

ANALYSIS REQUIRED: ANALYSIS STRATEGY FOR THESE TANKS IS NOT REQUIRED BECAUSE SAMPLING THE EFFLUENT STREAMS, FORM VI, IS NOT REQUIRED.

Constituent	Major Contributor to Effluent	Trigger for Analysis	Analysis Method	Detectable Limit	Reg. Limit	Standard Method	Comparison Program	Certification Requirement

X. Analysis Strategy (continued)

241-TY TANK FARM/200 WEST AREA
(Facility/Location)

Tank 241-TY-101, -103, and -106 BREATHER VENTS (Effluent Stream) Stream Code None (EP Designation) Waste Type Gas (Gas, Liquid, Solid)

ANALYSIS REQUIRED: THIS SECTION CANNOT BE COMPLETED AT THIS TIME FOR THESE TANKS. SAMPLING REQUIRMENTS (SEE FORM IX) HAVE NOT YET BEEN DETERMINED.

Constituent	Major Contributor to Effluent	Trigger for Analysis	Analysis Method	Detectable Limit	Reg. Limit	Standard Method	Comparison Program	Certification Requirement

XI. SCHEDULES, RECORDS, AND REPORTS

241-TY TANK FARM/200 WEST AREA (Facility/Location) — ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code: None (EP Designation) — Type of Waste: Gas (Gas, Liquid)

ALTHOUGH NO GASEOUS EFFLUENT STREAMS FOR WHICH MONITORING, SAMPLING, AND ANALYSIS HAVE BEEN IDENTIFIED, INFORMATION ON THIS FORM PERTAINS TO THE FILTERS ON THE BREATHER VENTS.

SCHEDULES:

	Requestor	Responsible Section	Ref. No.
Sampling and Analysis			
Process			
Effluent			
Calibration (DOP test)	TANK FARM OPERATIONS	VENTILATION AIR BALANCE	3

REPORTS:

	Subject	To	Responsible Section	Date Due	Ref. No.
Regulatory	REPORTING REQUIREMENTS HAVE NOT BEEN DETERMINED AT PRESENT.				
Internal	DAILY OPERATING REPORT (DOR)	DISTRIBUTION	TANK FARMS OPERATIONS	DAILY	7
Event	EVENT FACT SHEET	DISTRIBUTION	TANK FARMS OPERATIONS	WITHIN 24 HR.	12
Audit, etc.					

RECORDS:

Identification	Title	Responsible Section	Retention Period	Stored By	Ref. No.
Design Acceptance					
Calibration Operational	HEPA AIR FILTER SYSTEM TEST	VENTILATION AIR BALANCE	2 YEARS	VENT AIR BALANCE	9
Inspections	DATA SHEET 1	TANK FARM SURVEILLANCE	2 YEARS	TFPE	9
Analyses					
Corrective Action, etc.					

XII. QUALITY ASSURANCE PROGRAM PLAN

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

Stream Code None (EP Designation)

Type of Waste Gas (Gas, Liquid)

ELEMENTS OF QUALITY ASSURANCE: COMPLETION OF THIS SECTION FOR TANKS 241-TY-101 THROUGH 241-TY-106 IS NOT WITHIN THE SCOPE OF CURRENT EFFORT.

Components	Applicable Element of NQA-1																	Ref.
	1/	2/	3/	4/	5/	6/	7/	8/	9/	10/	11/	12/	13/	14/	15/	16/	17/	18	No.
Organization																			
Qualifications																			
Plans/Designs/ Studies																			
Procedures																			
Records/Logs																			
Aids, etc.																			

XIII. REFERENCES

241-TY TANK FARM/200 WEST AREA (Facility/Location)

ALL TY-TANK BREATHER VENTS (Effluent Stream)

1. Drawing H-2-36947, Rev. 3, "Wells in 241-TY Farm as Built", April 1978.

2. Internal Letter 65950-87-114, A. T. Alstad, "Additional Air Sampling, Isolated Single-Shell Tank Farms", May 19, 1987, page 3.

3. RHO-PS-MA-5, BU-20-02, "In Plan Testing of HEPA Filter Systems", J. H. Gasbrick, June 30, 1986.

4. SOP-TO-060-015, Rev. D-4, "Monitoring and Changeout of Waste Storage Tank Breather Filters", February 12, 1987.

5. SD-WM-SAR-006, Rev. 2, P. A. Smith, "Single-Shell Tank Isolation Safety Analysis Report", Section 9, August 1986.

6. OSD-T-151-00013, Rev. C-3, "Operating Specifications for Single-Shell Waste Storage Tanks", D. W. Lindsey, October 6, 1986.

7. Daily Operating Report (DOR), a daily Tank Farms Operations report which is internally generated to provide pertinent operating data and information to interested organizations.

8. SOP-TO-100-030, Rev. D-0, "Radioactive Waste Packaging and Transport Requirements", November 11, 1987.

9. RHO-MA-139, Environmental Protection Manual, Rockwell Hanford Operations - Radiological and Environmental Safety/Safety and Quality Assurance, June 1987.

10. Report, D. R. Ellingson, "Characterization of Breathing, Single-Shell Tank Radionuclide Releases", March 1982, page A.2.

11. WHC-SP-0038-9, J. M. Thurman, "Waste Status Summary for May 1988", Page 15.

12. WHC-MRP-5.14, Rev. 0, "Investigation and Reporting of Health, Safety, or Programmatic Events and Unusual Occurrences", June 16, 1987.

13. DOE Order 5400.1, "General Environmental Protection Program Requirements", Department of Energy (DOE), Washington, D.C., 1987.

241-TY TANK FARM

EFFLUENT MONITORING PLAN

LIQUID WASTE EFFLUENT SECTION

* * * * * * * * * * * *

THE SIX TANKS IN 241-TY TANK FARM ARE INACTIVE WASTE STORAGE TANKS. BECAUSE NO NEW WASTE ADDITIONS MADE, THERE ARE NO LIQUID EFFLUENTS (REFERENCE 6, PARAGRAPH 13.2.2, PAGE 13). FOR THIS REASON, A MONITORING PLAN FOR LIQUID EFFLUENTS DOES NOT APPLY.

241-TY TANK FARM

EFFLUENT MONITORING PLAN

SOLID WASTE EFFLUENT SECTION

* * * * * * * * * * * * *

NORMAL ACTIVITIES IN 241-TY TANK FARM, WHICH ARE MOST FREQUENTLY MAINTENANCE AND OCCASIONALLY OPERATIONS, GENERATE SMALL AMOUNTS OF SOLID WASTE MATERIAL THAT ARE NOT REUSABLE. THIS MATERIAL CONSISTS OF SUCH ITEMS AS TRASH, BROKEN TOOLS, PLASTIC SHEETS, TORN AND NON-REPAIRABLE PROTECTIVE CLOTHING, CARDBOARD BOXES, ETC. THE WASTE HAS LOW-LEVEL CONTAMINATION, IS PROPERLY PACKAGED, AND THEN MONITORED BY A RADIOLOGICAL PROTECTION TECHNICIAN, IN ACCORDANCE WITH APPLICABLE PROCEDURES (REFERENCE 8 IS A TYPICAL PROCEDURE). WHEN ALL PROVISIONS OF A GOVERNING PROCEDURE HAVE BEEN MET, THE WASTE IS RELEASED AND TRANSPORTED TO APPROPRIATE HANFORD SITE BURIAL GROUNDS.

8-14-86

SD-WM-EMP-012

ATTACHMENT 2

IMPACT LEVEL CHECKLIST (Sheet 2 of 2)

		Impact Level	Yes	No
12.	Activity requires documented verification of conformance to requirements involving replacement of subassemblies or parts with qualified spares, or involving changes to safety-related hardware, equipment, or components which have not been identified as Impact Level 1 or 2.	3	[ ]	[ ]
13.	Activity involves projects, programs, equipment, components, systems, or hazardous materials which have an impact on industrial safety, industrial hygiene, fire protection, waste management, radiological monitoring or involve compliance with National Fire Protection Association (NFPA) or Uniform Building Code (UBC) code requirements.	3	[ ]	[ ]
14.	Activity deals with protective maintenance features, or with the fabrication, installation, or modification of equipment or systems using commercial grade parts* or catalog items where their application does not affect the mission or safety functions.	4	[ ]	[ ]
15.	Activity deals with requisition preparation and the development of specifications for the procurement and use of commercial parts or catalog items requiring no receiving inspection.	4	[ ]	[ ]
16.	Activity deals with packages for field work on commercial parts, equipment, hardware, or catalog items involving negligible safety hazards.	4	[ ]	[ ]
17.	Activity deals with an approved change to correct a design problem identified during protective maintenance, modification, or other field work on commercial parts, equipment, hardware, or catalog items.	4	[ ]	[ ]
18.	Activity deals with editorial changes to approved engineering, administrative, or technical documents.	4	[ ]	[ ]
19.	Other activities which have not been identified as Impact Level 1, 2, or 3.	4	[X]	[ ]

*The Impact Level of commercial grade items (Paragraph 2.2) is normally 4 and should not be upgraded unless extraordinary circumstances warrant.

DISTRIBUTION SHEET

To	From	Page 1 of 1
DISTRIBUTION	Tank Farm Plant Engineering	Date 9/12/88

Project Title/Work Order	EDT No. 100616
241-TY TANK FARM EFFLUENT MONITORING PLAN	ECN No.

Name	MSIN	With Attach.	EDT/ECN & Comment	EDT/ECN Only
A. T. Alstad	R1-51	X		
T. A. Carlson	R1-51	X		
R. J. Baumhardt	R1-51	X		
J. E. Bramson	T1-30	X		
R. E. Wheeler	T1-30	X		

SEP 12 1988

ENGINEERING DATA TRANSMITTAL (EDT)

(USE BLACK INK OR TYPE)

Page 1 of 1

(1) EDT 100616

(2) To: (Receiving Organization): DISTRIBUTION

(3) From: (Originating Organization): Tank Farm Plant Engineering

(4) Related EDT No: N/A

(5) Proj/Prog/Dept/Div: Waste Management 13331

(6) Cog/Proj Engr: A.T. Alstad

(7) Purchase Order No: N/A

(8) Originator Remarks:

This document has been modified to reflect comments received and is being transmitted for approval and release.

(9) Equip/Component No: N/A

(10) System/Bldg/Facility: 241-TY Tank Farm

(11) Receiver Remarks:

(12) Major Assm Dwg No: N/A

(13) Required Response Date:

(14) DATA TRANSMITTED

(A) Item No.	(B) Document/ Drawing No.	(C) Sht. No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Impact Level	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	SD-WM-EMP-012		0	241-TY Tank Farm Effluent Monitoring Plan	4	1/2		

(15) KEY

Impact Level (F)
1, 2, 3, or 4 see MRP 5.43 and EP 1.7

Reason for Transmittal (G)
1. Approval
2. Release
3. Information
4. Review
5. Post-Review

Disposition (H) & (I)
1. Approved
2. Approved w/comment
3. Disapproved w/comment
4. Reviewed no/comment
5. Reviewed w/comment
6. Receipt acknowledged

(16) SIGNATURE/DISTRIBUTION
(See Impact Level for required signatures)

(G) Reason	(H) Disp	(J) Name	(K) Signature	(L) Date	(J) Name	(K) Signature	(L) Date	(G) Reason	(H) Disp
1	1	R.J. Baumhardt		8/16/88					
1	1	G.L. Dunford		8/16/88					
1	1	R.E. Wheeler		9/8/88					
1	1	Peer Reviewer		8/16/88					

(17) Signature of EDT Originator — Date: 8-16-88

(18) Authorized Representative for Receiving Organization — Date: 9/9/88

(19) Cognizant/Project Engineer's Manager — Date: 9/9/88

(20) DOE APPROVAL (if required)
LTR No.
☐ Approved
☐ Approved w/comments
☐ Disapproved w/comments

BD-7400-172 (12-87)

INFORMATION RELEASE REQUEST

COPY OF ORIGINAL

References: WHC-CM-3-4

Complete for all Types of Release

Purpose

- ☐ Speech or Presentation
  - ☐ Full Paper
  - ☐ Summary
  - ☐ Abstract
  - ☐ Visual Aid
  - (Check only one suffix)
- ☐ Speakers Bureau
- ☐ Poster Session
- ☐ Videotape
- ☐ Reference
- ☐ Technical Report
- ☐ Thesis or Dissertation
- ☐ Manual
- ☐ Brochure/Flier
- ☐ Software/Database
- ☐ Controlled Document
- ☒ Other ~~Dept. of Health~~ Audit

New ID Number

Existing ID Number (include revision, volume, etc.) SD-TAN-CMP-012 Rev 0A

If previously cleared, list ID number

Date Release Required

Title 241-TY tank farm Effluent monitoring plan

Unclassified Category UC-

Impact Level

Complete for Speech or Presentation

Title of Journal NTA

Group or Society Sponsoring

Date(s) of Conference or Meeting

City/State

Will proceedings be published? ☐ Yes ☐ No
Will material be handed out? ☐ Yes ☐ No

Title of Conference or Meeting

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer Name (printed)	Signature	Date
Classification/Unclassified Controlled Nuclear Information	☒	☒ CMS			
Patent - General Counsel	☒	☐	S W Berglin		3/30/92
Legal - General Counsel	☒	☐			
Applied Technology/Export Controlled Information or International Program	☒	☒ CMS	J D Watrous		4/10/92
WHC Program	☒	☐	G. T. BERLIN		3/25/92
Communications	☐	☒			
DOE-RL Program	☒	☐	R. G. Holt	R. G. Holt	4/04/92
Publications Services	☐	☒			
Other Program	☐	☒			
References Available to Intended Audience	☒	☒ CMS	Historical Document		
Transmit to DOE-HQ/Office of Scientific and Technical Information	☐	☒			

Information conforms to all applicable requirements. The above information is certified to be correct.

Author/Requestor (Printed/Signature) — Date 3/22/92

C. M. Stout

Responsible Manager (Printed/Signature) — Date 3/23/92

B. G. Erlandson

Intended Audience

☐ Internal ☐ Sponsor ☒ External

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

APPROVED FOR RELEASE OFFICIAL DOCUMENT CW Date 4-9-92

Date Received 3/26/92

MC

BD-7600-062 (04/90) Part 1

REQUESTOR:

SD-WM-EMP-013
ID Number

Lead Author	Phone	MSIN	Other Author(s) or Requestor
C.M. STOUT	6-8076	B2-19	Rev 0A

Project or Program	Lead Org Code	Sponsor Agency
	81140	(DOE) DOT, NRC, USGS, etc.)

Editor	Phone	MSIN	DOE/HQ Program
N/A	N/A	N/A	(DP, EH, EM, NE, etc.)

Mandatory Comments*	Reviewer Name & Signature	Date	Resolution	Date
Clearance for:				
SD-WM-EMP-003, Rev 0 (R01607)				
13314-88-027 (R03463) Minutes				
WHC-SD-WM-TP-098 Rev 0 (T01033)				
WHC-SP-0659 (T00537)				
SD-WM-EMP-012 Rev 0 (R02803) ✓				
Letter 3/29/91 9101513B-R1 (T01263)				
WHC-SD-WM-RD-014 Rev 0. (T01657)				
WHC-SD-WM-WP-073 Rev 0. (T01583)				
WHC SD-WM-WP-102 Rev. 1 (T01406)				
WHC-SD-WM-D2R-031 Rev. 0. (T01404)				
WHC SD-WM-WP-075 Rev. 0. (T01215)				
Letter, TF-91-002 1/8/91 (R02384				

*Only mandatory comments are to be documented. All other comments should be made on a copy of the information submitted for review and returned to the author.

Legends/Notices/Markings

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